

mortgage risk literature. Then, we describe the research design and methods to examine the effects of energy efficiency on mortgage risks. Finally, we discuss the results and derive implications for future research and policy.

Household Energy Efficiency

According to the Energy Information Administration's 2009 Residential Energy Consumption Survey (RECS), households spend around \$230 billion each year on energy (not including the transportation). The residential sector accounts for 20% of the total energy consumed in the United States (Energy Information Administration 2011). A widely cited study by McKinsey & Company suggests that energy efficiency in the residential sector has a potential to save \$41 billion annually (Granade et al. 2009). It is, thus, not a surprise that building energy efficiency is considered the "fifth fuel" and is actively promoted through government policy and voluntary action.

One of the widespread ways of promoting residential energy efficiency in the United States is the U.S. Environmental Protection Agency's (EPA) Energy Star program for appliances, commercial and industrial buildings, and new home construction. The market penetration of the Energy Star label in new housing construction is noteworthy—25% of new U.S. housing starts were Energy Star-certified in 2011.² Homes awarded the Energy Star label are at least 15%-20% more energy efficient than the typical new home and must meet rigorous guidelines for a high-efficiency thermal enclosure (windows, insulation etc.), Heating Ventilation and Air Conditioning (HVAC) system, and appliances, as well as a comprehensive water management system.

² <http://www.energystar.gov/index.cfm?fuseaction=qhmi.showHomesMarketIndex> (Accessed 5 February, 2013)